Attorney Docket Number: 243264US (FSP0241)
Client Reference Number: 243264US
Title: coaxial communication active tap device and distribution system
Application Number: 10/805,226

REMARKS

These remarks are responsive to the Office Action mailed on March 4, 2009. The Applicant thanks the Examiner for examination of this application. The Applicant believes that the claims are distinguished over the cited references, alone or in combination, and now traverses the rejection in light of the amendments to the claims herein.

Claims 1, 2, 6-8, 22, 23, 26-29, and 32 rejected under 35 U.S.C. 103 (a) as being unpatentable over Dan et al. (US Pat. No.: 7,039,942) and further in view of Tresness et al (US Pat. No.: 5,999,796) and Lee et al. (US Pat. No.: 5,485,630)

Claim 32

Claim 32 depends from claim 30. Claim 30 is not rejected as obvious in view of the cited combination of Dan, Tresness and Lee; if claim 30 is not obvious in light of the combined references, then claim 32 is also not obvious in light of the combined references. The Applicant requests that the rejection of claim 32 be withdrawn.

Claims 1 and 22 and dependents thereof

Claims 1, 22, and their dependents describe an active signal tap device comprising an active signal tap device comprising a signal input (IN) and signal output (OUT) and a tap output (combined port of D2), with a single directional coupler (DC) in series between the signal input and the signal output, the single directional coupler providing a single data signal tap to a combined port of a diplex filter (D1). See Fig. 5.

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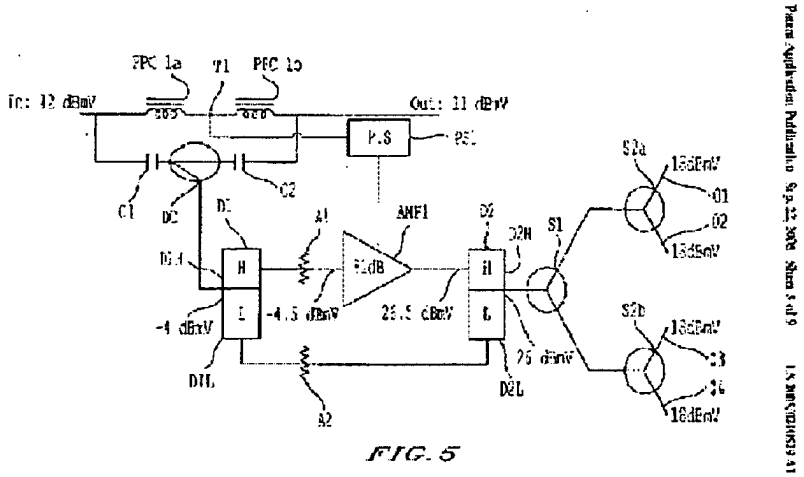

FIG. 5

Fig. 5 of present application

Dan teaches an active component in the high frequency path between a pair of diplex filters. Dan Fig. 4.

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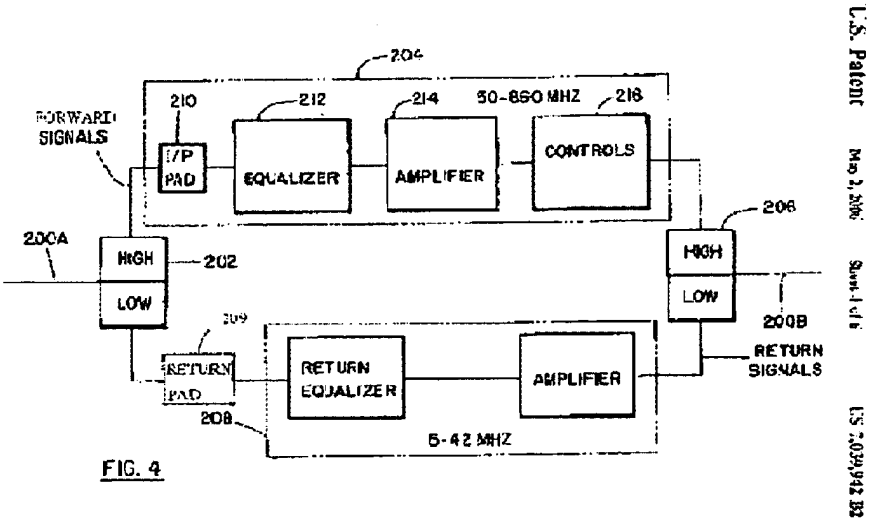

FIG. 4

Dan Fig. 4

Tresness does not teach a single directional coupler in series between the signal input and the signal output, the single directional coupler providing a single data signal tap to a combined port of a diplex filter.

The cited references do not teach the features of the claims, nor do they combine without substantial modification to yield the features of the claims. One skilled in the art would not be led by the teachings of the references to modify either one to yield the invention described in the present claims. The claims therefore are not rendered obvious by the combination of cited references.

Claims 2 and 23

The Office Action states that as to claims 2 and 23, Lee teaches "The noise figure FB of each branch a-d of the Input Section 30 for the signals (5 MHz-150 MHz) is less

than 4.4 dB... The amplifier 36 has a noise figure of 3.6 dB..."(col. 8/line 64—col. 9/line24). Though Lee does not explicitly teach the recited " noise figure of no more than 3 dB," it has been held that where the general conditions of a claim are disclosed in the prior art, except for an optimum value, it would have been obvious to one having ordinary skill in the art at the time of the invention to reach such an optimum value, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art **(In re Boesch, 617 F.2d 272, 205 USPQ 215 (CC PA 1980)).**

The Applicant respectfully asserts that In re Boesch does not stand for the general principle that all situations in which general conditions are taught in a reference will render obvious more specific ranges or conditions, and in fact the Examiner must make more showing than a general statement to that effect in order to render obvious a claim merely based on a reference that teaches a wider or looser range or condition.

The Examiner will further appreciate that there is a very significant difference between a noise figure of 4.4 dB and a noise figure of 3.6dB. The Examiner will also recognize that the noise figure recited in Lee is not applied to precisely the same configuration of signals as the ones recited in the claims.

Claims 4 and 25

The Office Action states that as to claims 4 and 25, Lee teaches that the output signal from the amplifier "is about +23 dBmV" (col. 9/lines 30-33). Though Lee does not explicitly teach the recited +18 dBmV, the recited value is substantially close enough to the "about +23 dBmV" taught by Lee that it would have been obvious to one of ordinary skill in the art to reach such an optimum value through routine experimentation, as analyzed above w/r/t claims 2 and 23.

The Applicant respectfully disagrees and points out that there is a very significant difference between a noise figure of 18 dB and a noise figure of 23 dB.

Claims 6 and 27

Regarding claims 6 and 27, the Applicant respectfully disagrees that the limitation of an active component configured to provide an RF output of approximately 18 dBmV with a maximum DC power consumption of no more than 0.5 Watts is functional per se.

Electrical and optical components of a same type may nonetheless have different ratings and characteristics. For example, resistors may have different impedances from one another, capacitors may have different capacitances, and amplifiers may have different gains and power consumption characteristics. These characteristics result from the internal structural configuration of the components. Thus, an electrical or optical component with one rating is structurally differently than the same type component of a different rating. Thus the Applicant respectfully asserts that in this instance, the feature of an active component configured to provide an RF output of approximately 18 dBmV with a maximum DC power consumption of no more than 0.5 Watts is a structural limitation.

The Examiner takes Official Notice that "active component" is a term commonly used in the art to refer to non-passive circuit elements (e.g., elements other than resistors, inductors, and capacitors) such as transistors that can produce more power in the output signal than is present in the input signal. notes that silicon or GsAs-type transistors are notoriously well-known and widely-used in the art to amplify a signal and as such would have been obvious to one of ordinary skill in the art at the time of the invention to employ.

Applicant disagrees and notes that active components tend to introduce more noise, increase power consumption, and so on, rendering the decision as to their use far from obvious in any particular circumstance.

Claims 7 and 28

As to claims 7 and 28, Examiner takes Official Notice that a MMIC is an extremely well-known and widely-used technique for circuit design and construction, particularly in microwave or RF applications, and would have been obvious to one of ordinary skill in the art at the time of the invention to employ.

Applicant respectfully disagrees and points out that none of the cited references teach MMIC circuits for the same application or configuration as is claimed.

Claims 8 and 29

As to claims 8 and 29, the rejection of claims 7 and 28 is incorporated herein. Examiner further notes that silicon- or GsAs-based transistors are notoriously well-

known and widely-used in the art in constructing a MMIC device and would have been obvious to one of ordinary skill in the art at the time of the invention to employ.

Applicant respectfully disagrees for reasons similar to those presented for claims 7 and 28.

Claims 9, 10, 15, 21, 30, 31, and 37 rejected under 35 U.S.C. 103 (a) as being unpatentable over Dan in view of Lee and Tresness as applied to claim 1 above, and further in view of Strull et al.(US Pat. No.: 7,138,886) and Kamiya (US Pat.No.: 6,785,908)

Claims 9 and 30 and dependents thereof

Claims 9 and 30 and their dependents describe an AC output tap between first and second AC power passing chokes.

Strull teaches a passive tap device 210 with a signal input 216 and a signal output 228 and a tap output 238, with multiple directional couplers (222, 230) in series between the signal input and signal output, providing multiple data signal taps to the non-combined ports (234, 236) of a diplex filter (235). Strull Fig. 5.

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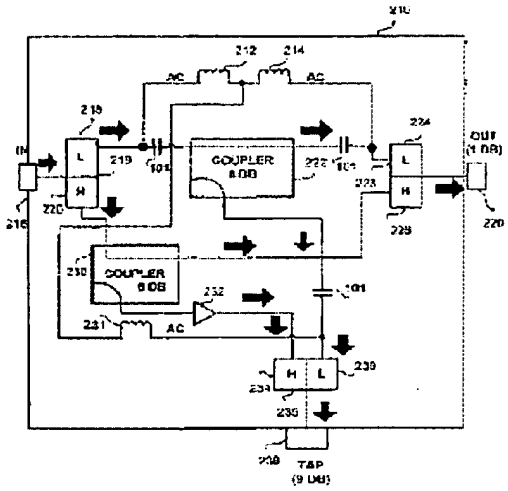

FIG. 5

Strull Fig. 5

A circuit combining the teaching of Dan, Lee, and Tressness could not be deployed with the circuit of Strull to yield the invention recited in claims 9, 30 and their dependents. Without substantial changes in function and/or structure, such a combination would not yield, inter alia, an active tap with a single directional coupler in series between the signal input and the signal output, the single directional coupler providing a single data signal tap to a combined port of a diplex filter.

Kamiya teaches a power tap at a different location than that which is claimed and thus when combined with the other references, fails to teach the present claims. Fig. 2.

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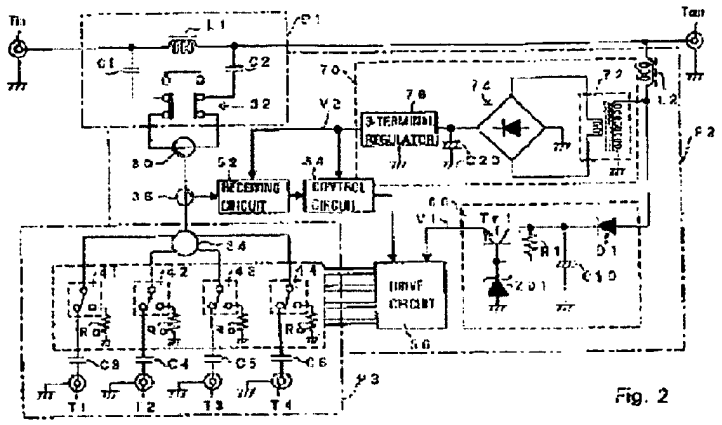

Fig. 2

U.S. Patent Aug. 31, 2004 Sheet 2 of 2 US 6,785,908 B1

Kamiya Fig. 2

The Office Action notes that Dan does not explicitly teach the recited "first attenuator connecting an output of the first high-pass filter to an input to the amplifier," but the Examiner takes Official Notice that it is well known in the art to use an attenuator in series with an amplifier to lower the voltage or power input to the amplifier and to improve impedance matching between the filter and the amplifier. The Applicant disagrees with this analysis. The Applicant respectfully points out that the attenuator of the present claims is utilized in a more specific sense than merely being in series with the amplifier. The attenuator is specifically coupled between the output of a _high pass_ filter and an input of the amplifier. The Applicant asserts that it would not have been obvious to one of ordinary skill in the art at the time of the invention to utilize an attenuator in this manner.

The Office Action takes Official Notice that the recited "amplifier connected to the DC power supply," is well known in the art, because an active element such as a transistor, operational amplifier, or MMIC device to require a DC power supply to properly bias the active components and allow the circuit to function as intended. The Applicant disagrees and notes that this analysis presumes selection of certain components that benefits in non-obvious ways from hindsight in light of the present disclosure.

Conclusion

The Applicant has cited numerous distinctions between what is taught by the cited references, alone or in combination, and what is claimed. The Application respectfully requests allowance of all pending claims.

Respectfully submitted,

Signature /Charles A. Mirho/ Date: 08/04/2009

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